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# THE AGRICULTURAL STUDENT



-A-  
MONTHLY MAGAZINE  
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*Winter Course Number -- January, 1912*

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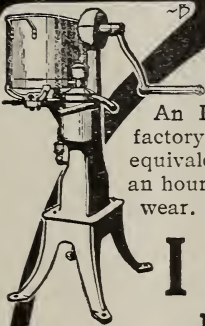
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Prices: 40 lbs., \$2.25; 100 lbs., \$5.00; 200 lbs., \$9.00, 300 lbs., \$13.00; 500 lbs., \$21.12. No order filled for less than 40 lbs.

[42]

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	Cattle	Hogs	Sheep	Total
1900 .....	395,353	376,478	1,321,872	2,093,703
1905 .....	690,153	556,905	2,650,024	3,897,082
1910 .....	871,630	722,087	3,354,137	4,947,854
In 1900 annual cash turn-over was .....				\$37,225,590
In 1905 annual cash turn-over was .....				\$70,717,490
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The founders of the firm, John Clay and Charles O. Robinson, are still active in its management. Associated with them as partners are J. G. Forrest, Frank H. Connor and C. A. Kleman.

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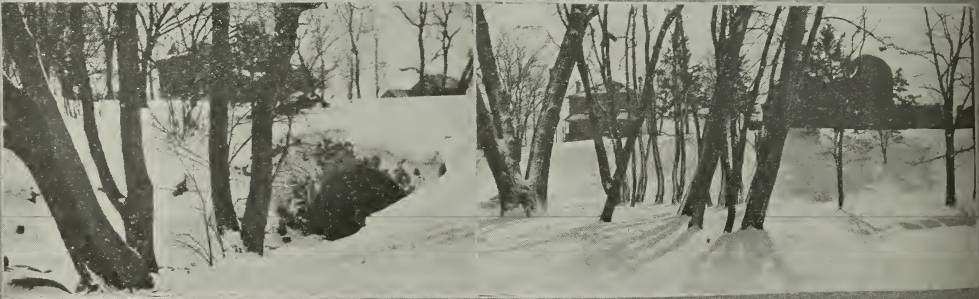
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THE  
CAMPUS



IN  
WINTER





# THE AGRICULTURAL STUDENT

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Vol. XVIII. OHIO STATE UNIVERSITY, COLUMBUS, JANUARY, 1912 Number 5

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## Foreword

ALFRED VIVIAN, ACTING DEAN

THE keynote of the Winter Course in Agriculture is immediate helpfulness to the man who is actively engaged in farming. The College of Agriculture desires in every possible way to serve the agriculture of the state of Ohio. The Winter Course represents merely one of its methods of attacking the problem of efficient service.

The College had long had its two-year and four-year courses for the young men who were foot loose, and who could spend the entire academic year of nine months at the University, and they have certainly demonstrated their value and usefulness to these young men. These courses being well established, the authorities began to look for other ways of rendering service to the state. It was at once apparent that there were numbers of men who would appreciate the opportunity to learn something of the newer discoveries in agriculture, but who were actively engaged in farming, and therefore could not come to the college for a full year. Many of these men, however, could arrange their work so as to devote a part of the winter season to the study of agriculture. It is for these men that the Winter Course is offered.

When this course was first suggested there were many "doubting Thomases." Many people prophesied (?) that such a course would not attract students. When their attention was called to the fact that such courses were extremely

popular in some of the western states, they said that conditions were so different in Ohio, and the people were so much more conservative, that it did not follow that the course would prove equally attractive here. That their fears were unfounded has been proven by the fact that the annual attendance has ranged from 135 in the first year to the present enrollment of 250.

The spirit shown by those in attendance from the very first has been highly gratifying. The Winter Course students have brought to the work an earnestness of purpose, a wealth of zeal and enthusiasm, that has been a constant source of inspiration to their teachers. The determination to get the maximum of possible information out of the eight weeks is apparent on every hand. There is no need of using the lash to urge unwilling hands to work.

Perhaps it is not generally appreciated that the teaching of these Winter Course classes is the most difficult work of the school year. The instructor has need of a wealth of information and a versatility that is not demanded of him in any other class in his University work. Most of the men who attend the Winter Course are practical farmers who "have been up against the real thing." They have had problems of their own to meet at home, many of which they have not solved to their own satisfaction. They come to the college not merely to get general information

regarding agriculture, but to get light on their own specific problems as well. The instructor, if he is to be of greatest service to them, must be able to quickly shift from the abstract to the concrete; he must have his knowledge of the state localized, and must be able to make a mental jump from Hamilton to Ashtabula, or from Fulton to Meigs on the instant. These mental gymnastics, while strenuous, are on the whole a good thing for the teacher.

Some may ask, "Of how much value is the Winter Course to the student?" The answer is, "Just eight weeks better than no course." The almost universal statement of the Winter Course men upon departing is, "We have

learned a whole lot that will be valuable to us and only wish we could take a longer course." And most of these men will take a longer course in another sense, for they will never be just the same kind of men again. The Winter Course has given them the start; they have become somewhat acquainted with the literature of agriculture; they have obtained a broader outlook; they appreciate better than before the dignity of their own calling; and they go home with a new inspiration. Perhaps many of them will not have another taste of college life, but come what may they will all be the better students of agriculture for having attended the Winter Course.



## The Boy and Agriculture

JOSEPH E. WING, OF OHIO

**G**OD was in a happy mood when He made the Boy. The Boy was His happiest thought, seems to me. The Girl? Well, she fits in mighty well to the scheme of things, but I know most about boys. I know their inner thoughts, their hopes, their fears, their desires, and all of that. It is only such

he longs to be good, how he longs to be strong and manly, how he longs secretly for nobility of life and for growth that will make him good and strong and clean. He can't fool me by his fun and his laughing, for I know that to the Boy, and especially to the Farm Boy, life is a serious thing and he wants to



THE BOY AND AGRICULTURE.

a short time ago that I was a boy myself, in fact I am not much past it today, if I am at all past it.

I like boys. I like their innocent fun, their nonsense—and I am chock full of it myself and am always getting into trouble on that account. I know how deeply serious is the boy at heart, how

live it like a strong, brave, patient, clean man ought to live it.

I know, mighty well, for what the Farm Boy has ambition. It is, first of all, for ability to do things, to be things. Then, he has some things that he wishes to accomplish. He has ambition to own a home, a little land of his



own, where he can plant things and watch them grow, where he can have horses and colts and cows and sheep of his own, and watch them grow. He longs for a spot of land where he can plant a home, too, build a house and plant trees and flowers about, and, some day, timidly he dreams of finding Her for whom the world was created—the World and him and all else. Those are the ideals, the secret longings of the Boy, and mightily well worth while they all are, to be sure. Now let's think of these desires for a little bit.

The Land. Is it not all taken long ago? No. It is not all taken nor all used. There is a farm under every farm in Ohio that is unused. There are millions of acres waiting to be limed, enriched, planted, in all the great East. There are regions where it is a little difficult to get foothold, true, but there is yet land, and to spare. Even the Homestead has a farm under it that has probably not yet been touched.

The Home. It will come. It need not be a mansion, just at first. A very little house makes a home. There are three elements in Home—a shelter, a fireside,

and a good woman. All these things are easily had. The shelter need not be a palace; there is more joy in the cottage by far than in the mansion. The fireside is a sacred duty that is easy to fulfill. The Good Woman! She is waiting for you, young man, and, come close while I whisper, (she is as eager to meet you as you are to meet her). Now don't tell that, it is a secret that the Good Woman guards to her last days, but I found it out.

But, my dear Boy, bear this in mind, there is a little more of God in Her than in you, she will astonish you with her frequent evidences of nearness of the Divine, so be worthy of her, be worthy if you can! That's a big order, I know, but try hard to be worthy of Her, can't you, my dear Boy?

And then think it all over, the spot of land that will be yours some day, the shelter where you may plant things, the fireside, and the Good Woman.

Think of these things, stand erect, hold your head proudly and smile! Smile!

The World is a mighty good place.





## Professor Oskar Kellner

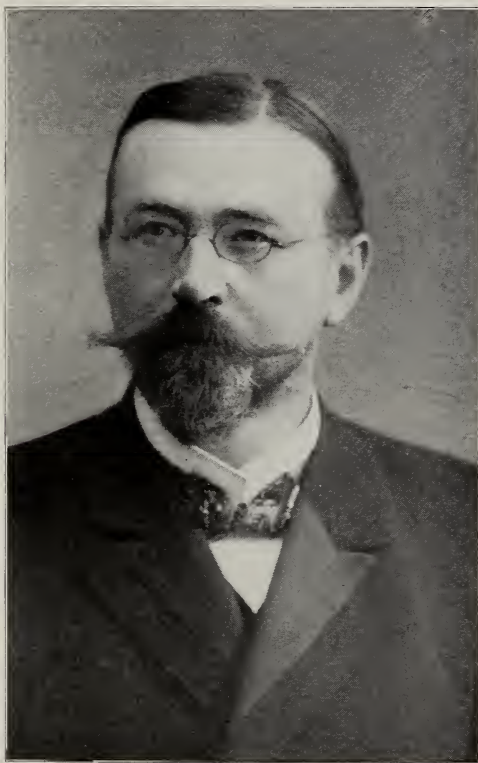
DEAN H. C. PRICE

(Written at Halle a Salle, Germany)

EVERY American agricultural student who has studied the subject of Animal Nutrition is familiar with the name of Kellner. In his recent death Germany has lost one of her foremost scientists working in the field of Agriculture, and his death deserves more than a passing notice. At the time of his

Breslau and Leipsig and received his degree of Doctor of Philosophy from the latter in 1874. For three or four years he was assistant to Professor Wolff, the noted animal physiologist at Hohenheim, whose name is also familiar to students of stock feeding.

In 1880 he was called to the National



PROF. OSKAR KELLNER

death Professor Kellner was director of the Moeckern Agricultural Experiment Station near Leipsig. This is the government station for the Kingdom of Saxony. His life's work had been in the field of agricultural chemistry and animal physiology, and particularly in the field of animal nutrition. As a student he was educated in the Universities of

University of Japan at Tokio and spent twelve years there, during which time he organized their agricultural experimental work and particularly their instructional work in agricultural chemistry and animal physiology. Instead of burying himself in a distant country and in a new field, he continued to contribute to the scientific world and made

for himself and the Japan University an enviable reputation.

In 1893, when the directorship of the Moeckern Experiment Station, the oldest agricultural experiment station in Germany, was made vacant by the death of Director Kuehn, Professor Kellner was called from Japan as his successor. Here the work for which he was best known was done and the publications of his results have had an important bearing on the subject of stock feeding.

In 1905 he published a work under the title of "The Nutrition of Farm Livestock." In it he used a new method of calculating the value of feeds, basing their value on the quantity remaining available for assimilation after deducting the amount required in the process of assimilation, and using the starch equivalent of the foods rather than the energy values. The work at once took foremost rank in the literature on stock

feeding and his methods were immediately put into practical working. A briefer and more popular edition of his work which was published shortly after had a very wide circulation and has now been translated into twelve different languages.

Professor Kellner's death was very sudden, due to an apoplectic stroke which overtook him while in attendance at the National Convention of the Representatives of the German Experiment Stations, of which he was president. He was only sixty years old at the time of his death, but had been a very hard worker and had published a great deal. He was highly honored among German scientists, and was a member of many honorary societies. His life and work have made a profound impression on scientific agriculture and remain as an inspiration to everyone working in the field of agriculture.



## My Impressions of the Winter Course in Agriculture

J. W. ZELLER, WINTER COURSE, '12

SUCCESS in any line of work depends very largely on having a right beginning. To start out well counts for much all along the journey. This is especially true in the pursuit of any scientific subject. Scores of young men have complimented the writer for having a son who, in an eight weeks' summer term, gave them a right start, a proper method in the study of physics.

The short course in Agriculture, while not long enough to pursue any subject to the end, is long enough to get a good beginning and to learn scientific methods in the further pursuit of this most important subject. To do these things are the aims of this course, and all the best resources of the Agricultural College of the University are employed to realize these aims. The regular instructors of the College are taking a deep interest in this course and are giving us the cream of their well-stored minds on the various subjects. The ability and interest with which the instructors present the various subjects are inspiring and are begetting an interest in those attending this course.

Then, too, the laboratory work is of the highest order. Here we are taught and trained to apply knowledge, to learn the practical side of the science we are pursuing.

Judging from the work of the first

six days, my impressions are that it will prove to be a schooling of great value to those present. The interest is growing from day to day despite the zero weather.

One special advantage in this school is the fact that some of the leading instructors have written books on the subjects they discuss. To read a chapter or two ahead of the instructor's daily theme enables one to get twice as much out of the lecture period. This method of study does not only double the opportunity to acquire knowledge, but each illuminates the other.

Since agriculture is now and will continue to be the most important and vital problem to be solved by the American people, since our whole political fabric rests on agriculture, and since the maintenance of the fertility of the soil conditions the very existence of the race, the surprise to me is that the number present is not double what it is. The vast amount of knowledge made available on this subject by the hard work of our Agricultural Colleges and Experiment Stations, and placed in book and bulletin form, would enable the farmers of Ohio to double their yield per acre in a few years, and thus not only increase their own profits, but make a valuable contribution to the common welfare.



## A Senior Member of "The Class of Sixty-one"

F. M. LUTTS, WINTER COURSE, '12

**I**T may be well to state in the beginning the reason why the writer, thirty-five years after "graduating" from the little red school house on the hill, is "goin' to school again" at this time in life.

It has been our good fortune, as well as our pleasure, the past few years, to come in contact with and make the acquaintance of, some of the best agricultural teachers, experimenters, lecturers and writers in the state of Ohio. Our experience in the past teaches us that it is impossible to brush elbows with the class of men named and not brush off something of value to the brushee. For this reason we could not resist the temptation to attend the "winter course" and browse around in the Ohio State pasture so thickly set with the nourishing grasses of practical knowledge, with an occasional nibble at the crib of science, all of which so nicely balances the feeding ration for the agricultural student. We do this believing, even in the comparatively few years Father Time will allow us to engage in actual farm business, that it will be well worth while to make the sacrifices necessary to do so.

It is not so much of a question as to what use the writer will make of the knowledge gained, in the few short years ahead of him, but what of the scores of young men enrolled for the winter course of 1912? Young men who have thirty-five years of practical experience ahead of them rather than that number of years back of them; young

men who will live to see the changes in agriculture which far-seeing men hold are sure to come; young men upon whom will fall the responsibility of making the products of the changed soil feed the people!

It will be the young men educated by and turned out from the Agricultural College who will be the salvation of agriculture in the future. The very life of every man, woman and child will depend upon them, either directly or indirectly. Therefore the absolute necessity for each one of them bending his energies to getting all that is possible from teachers, text-books and talks. And it is directly up to each individual young man as to whether he just "swaps even" or whether he gets something "to boot" for his time and money.

As these students go out to the various parts of the state, when through with the course, there will be a mental thread leading back to Ohio State, a thread which, while it is invisible, will pull stronger and wear longer than the largest steel hawser ever made. Not only will these main threads run out from the University to the homes of the students, but there will be cross bars leading from home to home, with a strengthening tie here and there from professor to pupil, the whole weaving over a state a web that will stand for better rural citizenship in the commonwealth of Ohio, enthusiasm for the college of agriculture, love and respect for the instructors, and friendship for one another.



## “The Country Church”

W. C. F. LIPPERT, WINTER COURSE, '12

FOR years the country church has been a cause of anxiety in all ecclesiastical circles. Even the Secretary of Agriculture for the State of Ohio has become alarmed over the situation and is seeking a solution of the problem presented. It will be a sad day for the rural sections, and not only for them, but also for the city and the nation as well, when the country church ceases to be, for it is a well recognized fact that the rural districts have furnished a large percentage of our foremost men in every walk of life, and that the church has played a most conspicuous part in this. It is well, therefore, that men should inquire into the situation and ask what can be done to save the country church with its wholesome influence, so that it shall continue its indispensable mission of molding the lives of those who are to be our future leaders in every sphere of life.

In many communities we find that the church has been depleted in membership until it has but little of its former influence, and, in not a few cases, the church has been abandoned altogether, while others are fast tending in the same direction.

Some have thought that this condition is attributable to indifference upon the part of those who live in the regions thus affected. It is true that, in some regions this will account for the present situation. We sometimes find that men who, when in humble circumstances, were faithful to the church and its interests, upon becoming well to do, have forsaken her. The farmer is no more proof against commercialism than is the business man, many of whom can be found in the same condition.

In many communities there has been

an astonishing change in the character of the population. The native population has either gone to the newer lands of the West or to the cities, and in return the rural district has received a class of foreigners who often are not church attendants at all. Of course in such a case we can readily understand the decline of the country church.

We may ask, why do so many leave the farm for the city, for, during the last decade, thirty-eight counties in the State of Ohio have lost in population? In nearly every case where families have gone to the city from the country, they have sought to better their condition financially and educationally. This, like a mighty magnet, is what draws them to the city, but often, when too late, nine-tenths of those who thus go find to their sorrow that they have worsted rather than helped their condition.

Here also comes in the boy problem. Even where the family as a whole does not go to the city, the boy often goes just when he is needed at home. Of course, it is not expected that every boy born in the country shall remain at home or in the country, and we meet some who would not, under any circumstances, remain there. But it is just as true that many would remain who go away if sufficient inducement were offered by the fathers to keep them there, so that through a short sighted policy a golden opportunity passes to keep the boy on the farm.

Many fathers think that so long as the boy is at home, he ought to work for his board and clothes, a horse and buggy, and a little spending money. Now every normal boy has the desire to make money and this is not to be repressed or condemned, but rather to be directed.

It is a perfectly proper desire. No father has the moral right to think and act as though his boys were given to him for the express purpose of farming them. When he does so he is violating a most sacred law, viz., that the parents are to provide for their children and not the children for the parents. Not that children have not the most solemn obligation resting upon them to care for their parents when they actually need them, but most emphatically, when parents do not need them to make a living, it is wrong to take, by sheer force or by the letter of civil law, the earnings of their children for their own personal gain.

Would it not be well for the father upon the farm to device a plan whereby every member of the family, as far as possible, could be taken into a partnership. For example, let each one be valued as to the service he is to render. He could fix his own salary at \$10.00, [or a hundred] a month, his wife's at the same figure, his boy of 14 to 16 years of age at \$8.00, the boy of 12 years at \$6.00, his girls of 8 and 10 at \$4.00. This scale of wages would also furnish the rate of profit in which each one would share in the profits and losses of the farm. If your farm and equipment were worth \$5,000, the interest at 5 per cent would be \$250.00. This would be charged up to the farm, plus the wages and the other expenses paid, including taxes and the upkeep of the farm. Then, after the expenses of the table in which all share in common are paid, the amount of profit or loss could be readily reckoned for each one. It should be understood, that in case the farm would be sold at a profit, they would likewise share in this profit according to the scale of wages established.

This method might not be perfectly safe for strangers, but surely a father

who lives for the benefit of his family could afford to be generous to his own. This plan would surely appeal to the best elements in every member of the home to do his level best in every sphere of endeavor upon the farm. The best of the plan is, that it is fair and generous, and the father, if he adopted the plan, would certainly have the satisfaction that he was doing the best to advance the material interests of his family. It might be an incentive for every one to fall in love with the farm and thus assure a larger percentage of boys remaining on the farm.

The minister of the Gospel, too, will have to realize that he must not only know something about men in general, but he must be interested in the special needs and the problems that confront the farmer. Intellectual leadership is needed and here is something that will challenge his best abilities. Perhaps in no other way can he so help the cause that lies so dear to his heart as by trying to help further the interests of his rural flock. Would it not afford a splendid opportunity for hundreds of ministers to take the Winter Course of Agriculture at the Ohio State University? What a stimulus it would prove to themselves and to others! Through the Agricultural College, I believe, the whole rural problem is going to receive a mighty forward movement.

Who can measure the influence of that noble body of two hundred and more students taking the Winter Course? Never have I heard of anything that has pleased me more than the grand lessons and ideals of life emphasized by those who are giving the instruction. Truly the prospect is most promising and I am inclined to think that the golden days of the farm are just ahead.

## What and Why

A. C. RAMSEYER, WINTER COURSE, '12

CONGRATULATIONS are due the citizens of Ohio for the forward step they have taken in providing for their sons and daughters a place of instruction where the agricultural student has equal share with the students of other professions.

Already we are seeing that many good things are in store for us, many we did not expect. We came with the idea of becoming more efficient farmers. We hoped to learn more about Soil Fertility, Farm Crops, Animal Husbandry, Farm Management, etc., and we are not disappointed. But in addition there are many more things so pre-

sented to us as should tend to make of us better and more useful men.

As one passes from one to the other of some half dozen buildings equipped with the most modern methods for instruction and devoted to the advancement of Agriculture, he cannot help but get a larger and more noble conception of the art and science of agriculture.

Each day we have the pleasure of listening to four or five lectures, all tending to inspire us to greater efficiency.

Not only are we helped while here, but are getting into a position where we can help ourselves when we return home.



WHO?



## A Winter Episode

GORDON DIXON, WINTER COURSE, '12

**S**NOW drifted down in fleecy flakes. In the cold silence, primeval forest giants creaked under this additional weight of niveous fringe. The log cabin in the little clearing seemed a mere black dot lying by the roadside. The road itself seemed rather a figment of the imagination than a real highway, disappearing at either end between huge trunks. No signs of life were there to break the silent Sabbath calm. The virgin snow is falling. All marks of man's rough work are covered.

By slow degrees the flakes grew smaller. Unhurried, slow, a bird of sombre plumage mounted up the quiet air and vented cries—cries which faintly reached the house. First no response, then a blanket covered window stirred a bit and a small childish head peered forth. The head withdrew, but the cries continued from above, now clear and sharp, now faint and indistinct, ever at the caprice of the moving, shifting air. Again the youthful head appeared, again it was withdrawn. At last a faint tingling of fairy bells. Then gaining in volume, sleigh bells jingled. Then—the steaming ponies, a sleigh,

and a bearskin figure. When through the clearing jingled clear and joyous the merry bells, the cabin door flew open wide and in the doorway stood a farmer, coarsely but warmly clad. Frontier strength is in his face, kindness written on his visage.

Close at his side a sturdy, ruddy urchin stood. The sleigh drew up. Two cheery eyes and a hearty voice cried, "Merry Christmas, neighbor." The sack disclosed some bundles. A few words and the sleigh passed on. The door was closed, the tinkling bells grew fainter and more faint. The lone bird's cries were there again, though soon they, too, were gone. The flakes fluttered like skeleton leaves of white. The Sabbath quiet came again and settled over all. But withal, we hear a gladsome childish cry of glee, vibrant, happy, full of joy.

The mail from the East had come again—and gone.

When we come—and go, see to it that we leave behind a gleam of joy, a happier heart, a spirit a little more in tune with its Maker's. So shall our own heart chords reverberate the more happily.

Blow winds and drift the snow,

'Tis winter now.

Because of you, I know

The better how

To prize my glowing hearth;

Beat at my door,

My kettle's song of mirth

I love the more.



## II. Biographical Sketch---Justin Smith Morrill

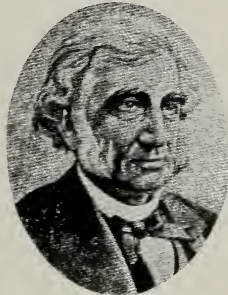
J. W. HENCEROOTH, '14

IT is fitting that this, the second biographical sketch of noted men in Agricultural Education, should deal with the life of Justin S. Morrill, the "grand old man" of Vermont and of the country at large.

Justin S. Morrill was born in Stafford, Vermont, April 14, 1810. His ancestors were among the hardy and aggressive settlers who wrested the little state of Vermont from the conflicting claim of New York on the one hand and of New Hampshire on the other, declaiming themselves a free and inde-

munity, and apparently his work was done, but, strange to say, he was yet to do his greatest work. Had he stopped here, there would have been lost to the country a man who for usefulness and service must be classed with Hamilton, Jefferson, and Clay.

In 1854, at the age of 44, he was elected to the House of Representatives. Taking his seat in 1855, he served twelve years, or until 1867, when he was further honored by a seat in the Senate, where he served continuously for thirty-four years of public service on the



J. S. MORRILL

pendent state January 16, 1777. He attended the country school and spent two terms at Thetford Academy. This was supplemented by a two years' clerkship in a country store and four years in a similar position at Portland. Then, in partnership with Judge Harris, he conducted a store in his native village, but retired at the end of fifteen years to cultivate a tract of land he had purchased near the town. This farm was developed rapidly and here he lived for seven years, proving his worth as a practical farmer and a tiller of the soil.

But at middle life Justin S. Morrill had accomplished what most men hope to do in a lifetime. He had a comfortable fortune, was respected by the com-

shining rolls of which there is no mar or stain.

Although having only a very meager education, he courted the friendship of books, and these came nobly to his rescue. Fiction or trashy books had no place on his shelves. He delighted in works on finance, taxation, in Blackstone's Commentaries, etc.

Over one hundred speeches in Congress, on widely different subjects, are credited to his remarkable genius. Having a ready wit, a simple, direct, clear, and forceful way of speaking, he held a leading position among his colleagues. When Justin S. Morrill was to speak seats were at a premium.

Although interested in every phase

of national legislation, it is to the three following acts that his own success as a statesman and the country's debt to him are due:

1. The Tariff Law of 1861, with its later modifications, and the complementary system of internal revenue.
2. Measures for the construction and modification of public buildings.
3. The Land Grant Act of 1862 for educational purposes, and the later supplementary legislation.

The first set forth the principle on which all tariff legislation since that time has been based with the exception of the Wilson Law of '93-'97. His committee also had charge of the framing and recommending of all measures for raising revenue to carry on the Civil War and later to liquidate the enormous debt incurred. The speed with which this debt was paid and a good credit established was due in a large measure to the sagacity of Mr. Morrill.

Many of the modern buildings in Washington owe their existence to his untiring labor. Among these may be mentioned the completion of the Washington Monument (after more than twenty-five years of inactivity), the State, War, and Navy Building, the marble terracing of the Capitol, and many others. However, the crowning sheaf of all was the securing of the beautiful Congressional Library Building.

Great and beautiful as are these monuments, greater yet are the monumental lives of the thousands of living men and woman who have been educated and helped as a result of the passage of the Land Grant Act of 1862. This act passed Congress and was signed by President Lincoln, July 2, 1862. It provided for the apportionment to each state, according to Congressional representation, its quota of public land.

When this land was sold it placed in the hands of the state accepting the grant a fund, the interest of which, coupled with the aid given by the state in question, would be sufficient to make a goodly sum for the establishing and carrying on of a college. These colleges were to be established for the benefit of "Agriculture and the Mechanic Arts." Their scope was to be broad, the field wide, and students were to have a chance to study "agriculture, the mechanic arts, and related subjects if they so desired." Mr. Morrill succeeded in getting this bill passed in the face of the strongest opposition and strengthened it by successive legislation. The Bill of 1890 placed the colleges on a firmer basis, and before his death in 1898 sixty-four colleges had been established. The influence of this act on the agricultural education of the United States is unlimited.

The "Hatch Act" of 1877, establishing State Experiment Stations, owes its origin to the impetus given to industrial education by Mr. Morrill. His own limited schooling seems to have suggested the desire to aid others in getting a better education. In fact, the purpose of his later life seemed to have been to help his fellowmen and his country, in whom he had the most unwavering faith.

This, in brief, is the history of the life and the work of Justin Smith Morrill, a simple, plain man of the people, who though deprived of the benefits of a liberal education, has done more for the education of the country than any man of modern times. He lived a clean, vigorous, useful life, against which there never was a whisper of corruption, incapacity, or wrong-doing. At his death the President, the Cabinet, Officers of State, dignitaries of the Army and Na-

(Continued on page 274)



## The Soil-Moisture Problem

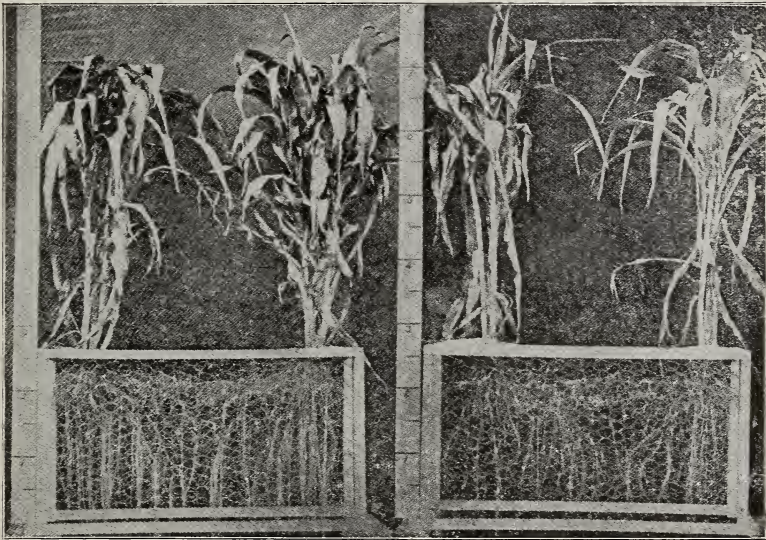
H. J. BOWER, FELLOW IN AGRONOMY

**T**HE actual yield of farm crops depends mainly upon the adaptation of the crop to the usual moisture content of the soil. "It is a well recognized fact that next to temperature the water supply of the soil is the most influential factor in the production of a crop."

Water is an important plant food, as it is used to form sugar, starch, and

soil as to always have an available supply of water for his crops.

The soil acts as a storehouse for moisture. The available moisture is stored and purveyed for plant use, under suitable conditions of tillage. Plants receive their moisture supply from the films of water, which normally surround the soil particles. Moisture held



SIXTY DAYS AFTER PLANTING.  
Showing Proper and Improper Methods of Tillage.

other important plant constituents. Water is the principal component of hydrostatic pressure transmitted from the roots through the plant sap. This is the principal force in the development of buds, leaves and flowers, and maintains the stiff, erect position of the plant parts. Soil moisture is the principal medium through which the other plant foods are derived from the soil and brought to the plant. Thus so important a problem as soil moisture makes it necessary for the farmer to so till his

in this form is commonly known as capillary water. The water to supply these films comes from two sources. One source is the water table held within the soil, and the other source is the capacity of the soil to absorb and maintain water, from rainfall or by irrigation.

The development of the plant improves with increase of water in the soil up to a certain proportion of the soil's water holding capacity. When the optimum portion is exceeded the develop-



ment of the plant is retarded. It has also been shown that the chemical composition of the plant is influenced by the amount of water at its disposal in the soil.

We can control the excessive supply of water, when the water table is too near the surface, by draining the soil. When a soil is artificially drained it should be well tilled, just the same as a naturally well drained soil, in order to have an abundance of available moisture for the crop's need. The results of good cultivation are not only primarily to kill weeds, but to conserve moisture. By proper tillage or cultivation we also give the soil a tilth, which allows for the requirements of aeration, and other actions to take place, as well as giving the crop the needed amount of moisture for growth.

The soil moisture problem is the art of keeping within the reach of a crop its daily supply. In the growth of each crop is a critical period which means success or failure. To control the weather is beyond the farmer's power, but his observations of the rapid growing crops on the loose, dark soils leads him to suspect that something can be done to make his soils withstand the drought the better.

Good tilth in the soil is secured by good cultivation and the presence of organic matter. The capacity of a properly drained soil for available moisture depends upon the structure, and the amount of organic matter held within the soil. Organic matter has a large capacity for capillary water, and it aids greatly in improving the structure of soils. The structure of sandy soils is made more compact with a capacity to hold a greater amount of water. The clay soils are given a loose structure, which allows a greater per cent of avail-

able moisture, besides the many other valuable conditions.

The moisture content of soils vary; some soils contain two or three times as much moisture as others under the same climatic conditions. It has also been found in field soils that two soils which have approximately the same soil constituents, have markedly different characteristics, peculiarities of drainage, moisture holding power, and ease of cultivation, due to the structure or tilth of the soil.

Capillary water is less available in soils composed of fine soil particles, or in compacted soils of poor structure. The sub-soil in most instances is composed of a larger per cent of fine soil particles than the surface soil. The sub-soil is also more compact. These conditions prevailing in the sub-soil cause crops to be unable to utilize the high moisture content in the sub-soil as they do in the surface soil.

By the addition of barnyard manure, and by plowing under green manuring crops, the soil, if low in organic matter, can be improved. Such additions should be applied moderately, and at the time of the season when the growing crop would be less likely to be injured, because organic substances alone, in abundance, cut off the connection of the film water between the sub-soil and the surface soil.

The soil should be gradually plowed deeper each year until a deep surface soil is formed. This would give a deeper feeding zone to the crop, a greater moisture holding capacity, with a greater per cent of available moisture, as well as the greater absorption of the rainfall, which so readily flows off the compacted field. The importance in general farming of having a proper moisture

(Continued on page 276)

## Our Youth and our Forestry

PROF. C. H. GOETZ

**T**REES and forests are in one sense the highest expressions of the plant kingdom.

It is this, the highest society of plants, that has made for us the best agricultural soil. On the uncountable numbers of generations of tree and forest

that where the greatest forest giant stood, there he would find the best soil for his agricultural pursuits, his herds, his corn, his wheat, and his fruits.

Primitive man considered the forest his best friend, because of the protection and food that he found there.



ROADSIDE FORESTRY.

remains we are today building the great agriculture. Through the death of these has come the life of today.

Man and civilization of today has ever followed the regions of the earth where he has had to make room for himself in the primeval forest with fire and axe. Instinctively or otherwise, he knew

However, as soon as he became an agriculturist and a herdsman, he, in his eagerness to get from Mother Earth the store of wealth laid up by the forests in the ages past, thought of the forest as an enemy and a hindrance to his progress. It is only within recent years, after some of the soils have been ex-

hausted and he has had time to reflect upon the true origin of the soil's fertility that he has come to understand the value of trees and the forests in making fertile agricultural land for his own use, thus, by combining the rocks of the earth's crust with the carbon and nitrogen of the air, through the agency of the water and the ever present heat and light of the sun, into an ever deepening stratum of vegetable humus, mold.

The relation of the youth of our land to forestry and the growing of trees is simply this—if he and his posterity wish to have a fertile soil, or an exhausted soil renewed, they must become interested in the conservation of the soil fertility. This can be done by having part of the land growing trees. This will tend toward the rejuvenation of the soils by the use of other food elements than those used by farm crops. All waste places should be planted to trees which will in the course of time make rich areas of the now barren lands.

The influence of forests and trees on a country and its prosperity should be known to every youth. The success of agriculture, horticulture, mining, navigation, irrigation of our desert lands, water supply, climatic conditions, and the esthetic value of the land all hinge upon the forests and tree growth. It is also well known that all other business interests are intimately bound up in the success of agriculture in all its varied phases. They can not get along, one without the other.

Then, too, when we consider that the comforts of the present civilization are directly or indirectly dependent upon the forests and their products to such an extent that we would be helpless were we deprived of this, the most valuable asset to civilization. We scarcely give it a thought, but to the thinking mind it is simply fascinating to consider the extent to which we are indebted to the use of wood from the cradle to the grave. As yet no perfect substitute for wood in all cases has been found, and the new uses to which wood and the products of wood can be placed are increasing from day to day as science discovers them.

The relation, then, of the youth to this most vital question is self-evident. It is a problem the solution of which involves not only his own but the welfare of the generations yet unborn.

That this is the most vital problem before him is proclaimed by men of high scientific standing, as well as by all the thinking men of the age. It is claimed by many, that at the present increased rate of consumption of the wood supply that within the short period of twenty-five years there will be a wood famine in our land. The youths of 18 and 20 years of age will be in the prime of their life when this condition will stare them in the face.

It is the youth of our land, above everyone else, who should be the greatest advocate of the conservation of this the most vital of our natural resources—The Forest.

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### Justin Smith Morrill

(Continued from page 270)

vy, the Supreme Court, and foreign officials gathered to do homage to the man who had risen from a humble sphere to a place of highest honor and trust in the nation.

Perhaps the greatest tribute of all might be the same as that paid to the architect of Westminster Abbey—"Stranger, if you want to see his monument, look around you."



## “Battle of the Kernels”—Official Report

C. S. WHEELER, SEC.-TREAS.

THE sweepstakes five ears of corn in the Students' Corn and Grain Show, held in Townshend Hall, January 11 and 12, was won by Harley C. Hoyt, a senior four-year man from North Fairfield. As sweepstakes premium, Mr. Hoyt received the Governor's gold medal; and for first in his class, the implement donated by the International Harvester Company. Other competitors for the sweepstakes trophy were the winners in the four other five-

lation indulged in as to who would win. The final results showed that an ear of yellow corn belonging to C. C. Engle had won the prize.

In small grains, the \$5 cash prize easily made barley the leader in interest. A number of high grade samples were shown, first prize going to C. M. Fritz. S. E. Dolle won second; and L. E. Melchers, third.

Mr. F. A. Welton, Assistant Agronomist at the Wooster Experiment Sta-



ear classes. D. H. Evans, a freshman four-year man from Venedocia, was awarded first on yellow corn in the outside classes. Mr. Evans won the handsome silver loving cup donated by the "National Stockman and Farmer." First on white corn in the outside classes went to C. Foster. W. E. McCoy received first on white corn in the class restricted to members of "Agronomy 109."

Outside the sweepstakes, the most closely contested class in the show was the single ear. Some very showy corn was entered and a good deal of specu-

tion, judged the show and gave complete satisfaction.

As an expression of interest in grain work and grain judging, the whole affair reached its climax in the "Corn Supper," held in the Ohio Union dining hall Friday evening and attended by about a hundred and twenty-five corn enthusiasts. A pleasing feature of this "Battle of the Kernels" is the fact that, while no donations from students and faculty were received, yet the management was able to pay all premiums in full. No small part of the success of the show is due to the hearty co-operation

and assistance of the dean's office. Professor G. E. Livingston first proposed holding a grain show, and fathered it to a brilliant satisfactory conclusion.

The success of the grain show this year and the general interest shown, seem to justify the prediction that it will be made an annual affair and increase in importance.

#### For Advanced Students.

Five Ears Yellow Corn—First, H. C. Hoyt; second, C. C. Engle; third, Glen Hayes.

Five Ears White Corn—First, W. E. McCoy; second, S. R. Guard; third, R. M. Salter.

Wheat—First, E. D. Blaine; second, C. C. Engle; third, H. C. Hoyt.

#### Outside Classes.

Five Ears Yellow Corn—First, D. H. Evans; second, E. R. Andrews; third, P. L. Sherritt.

Five Ears White Corn—First, C. Foster; second, C. A. Gearhart; third, O. H. Pollock.

Wheat—First, H. W. Jones; second, G. E. Sharon; third, A. H. Weber.

Oats—First, C. A. Gearheart; second, C. M. Fritz; third, C. F. Class.

#### Open to All Students.

Sweepstakes in Five Ears—First, H. C. Hoyt.

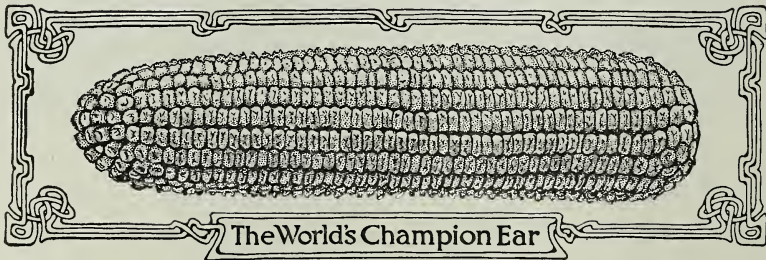
Single Ear—First, C. C. Engle; second, W. E. McCoy; third, C. R. George.

Barley—First, C. M. Fritz; second, S. E. Dolle; third, L. E. Melchers.

White Cap Corn—First, B. Linville; second, R. R. Thompson; third, G. B. Crane.

First prizes were \$2.00, second prizes \$1.00, and third prizes a year's subscription to a farm paper. Subscriptions were donated by the "Ohio Farmer," "Farm and Fireside," and the "American Agriculturist." The Wing Seed Company donated \$15.00 cash.

It devolves upon next year's class to carry the second annual engagement of the "Battle of the Kernels" through to a more glorious victory.



## The Soil-Moisture Problem

(Continued from page 272)

content before plowing or other cultural operations is widely recognized. Plowing the soil dry often brings disastrous results. It is easily proven that the tilth of the soil is connected in the most intimate way with its water con-

tent. Thus, with proper culture, the crops not only grow better from their suitable supply of moisture and food, but their critical period of growth may often be safely tided over a short drought.

## Boost Ohio

REV. GEORGE W. BROWN, ZANESVILLE, OHIO

Boost Ohio, boost her high,  
Boost Ohio, boost her dry;  
Boost her valleys, up and down,  
Boost her country, village, town.

Boost her north, east, south, and west,  
Boost her outside, but inside best;  
Boost her roads, schools, farms and  
churches,  
Boost not alone by words, but works.

Build her good, broad and deep;  
Make social conditions, all races keep,  
Centralize and work and plan  
Her markets, railroads—to best serve  
man.

But in our boosting, don't forget  
God's will and plans are working yet.  
So boost Ohio and make her rare  
Have boys and girls of character.







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COLUMBUS, OHIO, JANUARY, 1912

## Editorial

Two hundred and fifty strong! A veritable battalion of virile, red-blooded, rural soldiery **THE ISSUE.** ready to fight the battles confronting Ohio's countrymen and to advance the cause of a better agriculture for the whole people. In your achievements we shall feel a deep sense of pride. Your combined influence for good is sure to be state-wide. For your present we extend congratulations, for your future felicitations.

And that you may feel, Fellow Student of the Winter Course, that **THE AGRICULTURAL STUDENT** of OHIO STATE UNIVERSITY has a deep, fraternal interest in all the things that make for your presence among us, and an abiding faith in what your presence here will mean to the University and the people of Ohio, we are happy in dedicating the first issue of the year to the **WINTER COURSE OF 1912.**

Fortunate, indeed, is the citizen of Ohio who avails himself of the Winter Course in Agriculture.

**THE WINTER COURSE.** A quarter of a thousand have grasped the golden opportunity.

The number should have been much larger, but as it is it is a healthy, normal, solid growth, auguring well for the future of the institution. Another season of aggressiveness such as this, another campaign of advertising, and the effect of cumulative results will begin to be manifest. We congratulate both the promoters of the course and the recipients of its benefits. We challenge the world to show us a finer band of strong, red-blooded youth than is now in our midst for the betterment of their own selves and for the benefit of the lessons to be carried back to their several communities all over this great state.

From time immemorial the culture of the soil, the practice of husbandry, has been regarded as the most honorable of all occupations. Rightly so. The touch of the sod, the smell of the earth, the communion with Nature, does it not bring out in man all that is most noble, most human, most brilliant, (if you please)? And in these days, with the advantages of education, of training, of the application of mind to muck and brains to soil, the agricultural arts should be held in still higher reverence. Some one expressed it, when he sang,

"Now I see the secret of the making of the best persons,  
It is to grow in the open air and to eat  
and sleep with the earth."

And yet—and yet as a class, are we farmers not entirely too lax as to the dignity with which we surround our profession? With all the heritage of the ages to maintain our self-respect, with a human history replete with instances of the honor attached to husbandry, we have permitted many other classes to surpass us in the regard with which they hold their business. It should not be so. Was not Odysseus proud of his skill with the plough? Were not the works of Mago—the father of husbandry—alone out of all the treasures of Carthage deemed worthy of preservation at her sack? Did not Collumella write, "Our worthy ancestors looked upon it as their glory (aye, 'glory'—that's what we should style it today) to take care of their rural affairs and employ themselves in husbandry," and did not Pliny and Varro and Virgil find their most supreme delight in the field? How are the mighty fallen!

Why is it so? 'Tis merely an expression of the modern, ever present com-

mercialistic aspect. The chase for the dollar has dulled our finer sensibilities, we have too often considered our profession as but a means to an end. But the future farm home is to become the finest expression of all that is sweet and gladsome and good, that may be found in this wide "vale of tears." The hope lies in the education of the rural youth, bringing them to see that of all the classes of men their sphere is the most honorable, the closest to the Eternal Heart of Things. As college men—long course, short course, winter course—all, it behooves us to ever preserve the ancient dignity of agriculture, to graft on a new, live self-respect, if the old branch is deadened or weak, and to yield the palm to no class or condition of men when it comes to the wholesome self-respect, honor and dignity which we attach to our own profession—Agriculture.

---

Attend your literary society. It's one of the most valuable courses. Find your niche. Get acquainted, we're all anxious to meet you. And at literary you'll learn many things of untold value, self-possession, ease, the art of speaking, etc. You need the literary society as much as it needs you. Come out and join.

---

One thousand two hundred and fifty. That many young men are today taking advantage of Ohio's collegiate equipment for the education of her youth agriculturally. Is not our pride pardonable? And, just watch us grow. The secret of our "leaps and bounds?" Certainly. We're boosters. All of us. And, we boost altogether. All ready for the next notch, and all together!

Eight weeks in which to work and study and glean in the field of science.

What will it mean to me?  
**IN EIGHT** What shall I garner? It  
**WEEKS.** will mean dollars and cents to me, this Winter Course. Better methods, cheaper methods, easier methods, these I shall surely learn. Every lecture is full of practical agriculture. It makes my heart leap when I think how I'll put this morning's lecture into practice and make the old north field respond anew, how that spraying and pruning will save the old Spies and the Baldwins, how that new pure-bred will make my herd the envy of the community. Yes, every lecture is full of practical knowledge, the essence of experience and science. Yes, shall I say some of them are ultra-practical? What is the end of it all, anyhow? The guideposts all seem to point to a better man. The field, the tree, the beast—it makes us happier to know they are perfect, but after all, they are but means to an end. All good things lead to happier, broader, better man. I shall not forget that.

Sure it's practical. But I do want to know some things, a lot of things, just for the satisfaction of knowing. Why is it so? Why do that? Whence does it come? Whither bound? I want to go more deeply, O so much more deeply into these fundamental sciences, chemistry, zoology, botany, geology—all. Yes, and some culture, too. What know I of my ancestral race, what of men's struggles and trials and thoughts and history?

Yes, it's a four-year course at Ohio State for me, if possible! if not—well, a great big library at home.

It costs the State something like two hundred dollars per student, over and above all fees received, to maintain **OHIO'S** you at college for one **INVESTMENT.** year. If you look upon your four years' sojourn at this institution as merely a means of ultimately increasing your own material wealth and prestige, you are simply misusing the State's money.

The only possible justification for thus gratuitously using society's funds lies in the assumption that by having pursued this course of training you will be more fully fitted, at some future time and place, to raise some small portion of society to a better, higher, and fuller understanding and enjoyment of life. Especially is it incumbent upon the student of agriculture to ever keep foremost in his mind the fact that one day he must return to that region from whence he has but recently emerged, and must transfuse into that community some of the life-giving blood from the arteries of Science, Literature, and Art, in their broadest and finest applications to rural living.

The State is confidently investing her funds in your personality and intellect. Are you preparing to pay the interest?

---

If you, by any chance or untoward circumstance, have not yet subscribed for THE AGRICULTURAL STUDENT, "now is the accepted time." Remember, it is leap year, and if you don't hurry we may decide to propose that you help us, your college and yourself by helping to swell our mailing list. He who takes all that he can get from an institution and yet returns not a whit, is he worthy?





### CADWALLADER COMES—AND GOES.

Mr. John Cadwallader, '10, of the Dairy Department, Oklahoma Agricultural College, was in Columbus during the holidays on very important business, the most important of which was the claiming of a bride, Miss M. E. Garhart, '10, who returned with him to their future home in Stillwater, Okla.

Acting Dean Vivian recently made two trips to Pennsylvania to address assemblies of farmers. The first trip was made at the solicitation of Dean Hunt, of the Pennsylvania State Agricultural College. Much interest was aroused among the patrons of "State College Week" by Prof. Vivian's three lectures on Fertility, Organic Matter, and Decoration of the Home Grounds.

One week later, January 5th, he again lectured before a "Farmers' Week" organization at Canonsburgh, near Pittsburgh. Mr. David P. Snodgrass, a graduate of Ohio State, has charge of this organization and has made it one of the best in the State of Pennsylvania.

The Department of Agronomy has secured a number of corn hybrids through the courtesy of Professor Emerson, of Harvard University. These plants were planted last season and sufficient material was obtained to enable the department to show the operation of Mendel's Law of Hybrids.

### OHIO EXHIBITS.

Ohio's Baron and a pen of South-down wethers were exhibited by the University at the Pennsylvania Stock and Dairy Show, held at Pittsburg, Jan. 15-20. Ohio's Baron, a "State" bred Berkshire barrow of exceptional merit, won Championship of his breed and Reserve Grand Championship of all breeds at the recent International Show. The wethers were a select pen, having won championship in the college classes, besides numerous individual prizes at the same show.

This exhibit attracted much attention at the Pittsburg show and did honor to the live stock at Ohio State. V. A. Place and L. L. Heller spent the week in Pittsburg in charge of this exhibit.

The Soils Laboratory of the Department of Agronomy is being remodeled and new equipment is being installed. As soon as the changes are completed the laboratory will accommodate three hundred and twelve students.

### COURSE IN CAMP COOKERY.

A course in camp cookery, open to forestry and engineering students, is to be given by the Domestic Science Department of the Ohio State University. The instruction will consist of lectures, laboratory and field work. The selection of the proper articles of diet, the cooking of meats, the baking of bread and all the details of camp cooking will be studied.

### OHIO STATE AT THE POULTRY SHOW.

The University exhibit was an interesting and instructive feature of the recent Columbus Poultry Show. Prof. F. S. Jacoby was in charge of the exhibit and gave demonstrations on the killing and dressing of poultry for market. A model poultry house and a display of graded eggs were instructive features of the exhibit.

H. E. Eswine, of the Extension Department, is looking after the interest of the Department's exhibit in the Ohio Boosters' car. This car is fitted up by the State Board of Agriculture, the Ohio Experiment Station, and the Extension Department of the Agricultural College. It will travel over the state for one hundred days, demonstrating the advantages of Ohio over other states, especially of the South and West.

Prof. Graham, of the Extension Department, gave an address at the Farmers' Short Course at Urbana, Illinois, January 16.

Prof. F. R. Marshall delivered an address on "Breeding Farm Animals" at the meeting of the Ohio Live Stock Association.

### PURE BRED POULTRY SCARCE.

Of 1483 people, on a recent agricultural special train, who were asked if they kept pure bred poultry, only 142 responded in the affirmative. This means that less than 10 per cent keep pure bred poultry, which is a very low percentage, especially since the pure bred birds are so much more profitable. Professor Jacoby says that the pure bred poultry consumes less feed, produces more eggs, and is worth at least one-fourth more to the farmer than the mongrel stock.

Prof. C. S. Plumb delivered an address before a joint session of the N. Y. State Breeders' Association and State Agricultural Society on January 17th, at Albany, N. Y. Representing the sheep interests of Ohio, he spoke on "The Cost of Mutton Production."

Prof. C. S. Plumb received a signal honor by being elected President of the Ohio Live Stock Association at its last annual metenig.

Prof. McCall has been put in charge of the committee that is to judge the corn at the State Corn Show at Springfield. Mr. Darst will assist in the judging.

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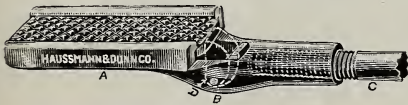
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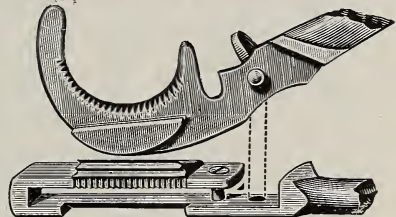
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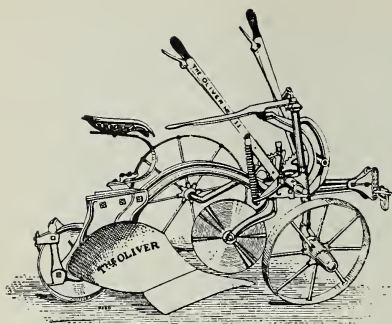
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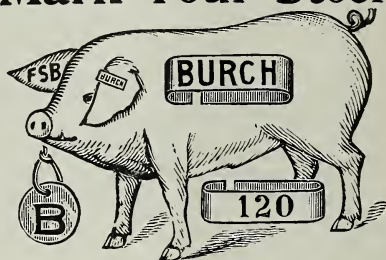
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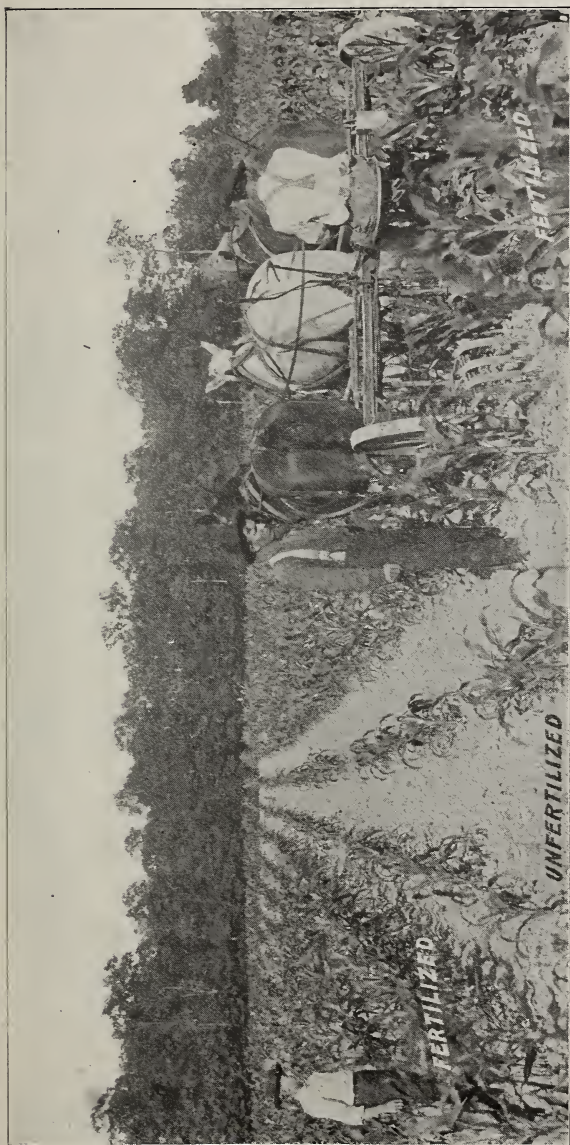
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30 bushels.....Wheat  
2 tons.....Hay  
40 bushels.....Oats  
210 bushels.....Potatoes

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14 bushels.....Wheat  
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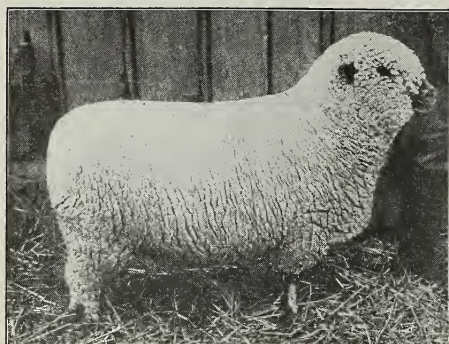


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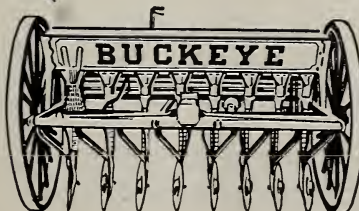
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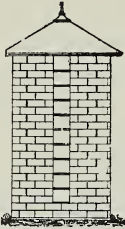


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Are made in every style. Recognized everywhere as the "complete, dependable line." No matter what kind of crops you grow or on what kind of land—steep hills, slightly rolling or flat land—there is made a Buckeye Cultivator that will "insure the greatest yield from any field." Send for Buckeye Cultivator Catalogue and go to your local implement dealer and insist on seeing Buckeye Cultivators. "The Buckeye—a wise buy."

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SPRINGFIELD, OHIO. U S A.

# THOMAS

DRILLS  
HARROWS  
HAY MACHINES

## THE STANDARD

Ask for Catalog.



The Thomas Mfg. Co.  
SPRINGFIELD, OHIO.

# \$3,000,000



Will be saved this winter to the users of **INDIANA SILOS**. There is another winter coming. 15,000 silos in use our best salesmen. We are the largest manufacturers of silos in the world. Licensed under Harder patent No. 627732.

## INDIANA SILO CO.

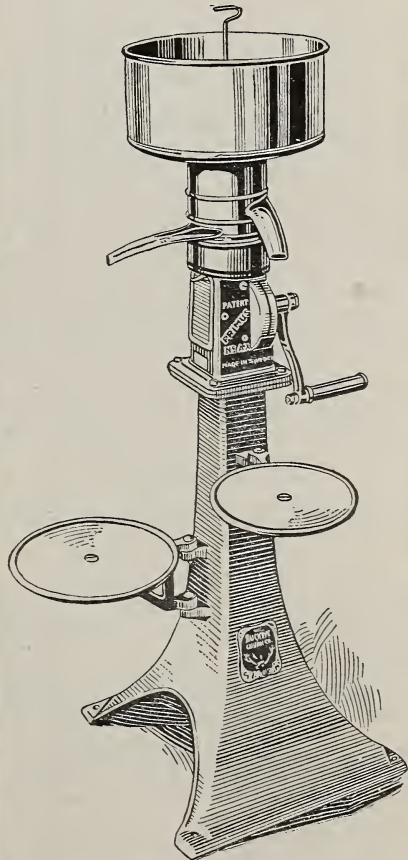
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## THE PRIMUS CREAM SEPARATOR

stands first because it saves those weary hours of cleaning.

It is the simplest—having fewest parts—is the most easily and quickly cleaned, the lightest running, and the closest skimming separator made. It is low priced and lasts a lifetime.

Get more money out of your cows. Write us for full information and catalog.



THE BUCKEYE CHURN CO.  
Dept. A, SIDNEY, OHIO



# Our Collegiate Advertisers

Fellow Students, let us show our appreciation not only by giving these firms our trade, but by boosting them to our friends. A thousand students here in school ought to be a class that any firm would be glad to get their goods before. Look over this list of advertisers and do your business with them, at the same time mentioning your connection with "The Student."

## Varsity Barber Shop

The Best and Most Convenient Barber Shop for  
"Ohio State Students."



The same old stand  
*refitted and remodeled.*

## Four Suits Pressed \$1

We remove the spots, put on buttons and sew up rips on all suits pressed.

**SPECIAL ATTENTION TO  
LADIES' WORK**

Work called for and delivered.  
Phone us.

## Ohio Cleaning Co.

1585 N. HIGH ST.

(Varsity Barber Shop.)

North 59.

Citizens 11214.

Citizens Phone 7085

Bell, Main 5966

**NEW STORE NEW GOODS  
NEW MANAGEMENT**

**THE COLUMBUS SPORTING GOODS CO**

**ATHLETIC AND SPORTSMEN'S  
SUPPLIES**

16 EAST CHESTNUT STREET.

## The McDonald Hardware Co.

1204 NORTH HIGH STREET

We are always pleased to do business  
with O. S. U. boys.

**T**WO PROMINENT INSTITUTIONS of learning: O. S. U. for training and developing the mind; Howald's for training and developing an artistic taste in beautifying the home.

We cordially invite you in and look over our line of Furniture, Rugs and Draperies.

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## HOWALD'S

34-36-38 N. High St.

## MARZETTI Restaurant

1548 N. HIGH ST.

Headquarters for "Ohio State" Boys.

STRICTLY HOME COOKING.  
FAMOUS PORK SANDWICH.  
POOL.

## Groff's Pharmacy

DRUGS,  
CHEMICALS, STATIONERY  
... and ...  
TOILET ARTICLES.

2091 North High Strete.

## New Era Restaurant

Just What You Are Looking For:  
A place for Students to get good board  
at low prices.

A \$3.00 Commutation Book for \$2.75

Give Us a Trial—Sure to Please.

1591-93 NORTH HIGH STREET  
(Formerly Turner's Restaurant.)

## Clark's Bakery

FINE LINE  
BREAD  
CAKES  
& PIES

Special Attention given  
to Clubs and Fraternities

## Things You Ought to Know!

We are located at Cor. Eighth and High, Columbus, Ohio.

Our Telephones: Citz. 4253; Bell, N. 1223.

Our goods are the best and always fresh.

Our prices? You can't beat them, quality considered.

We are never in dispute with customer about their accounts.

"Honesty brings Confidence."

"Confidence brings Business."

"Business brings Appreciation."

Thank you,

AARON HIGGINS.

## FRATERNITIES AND BOARDING CLUBS

Always Find Our

## Meats and Groceries

STRICTLY FIRST CLASS

## ABERNATHY BROS.

1609 HIGHLAND STREET

Citz. Phone 16504

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## C. L. VOLK'S

is the place to buy

## Groceries, Meats and Fruits

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1553 NORTH HIGH ST.

—GO TO—

## MILLER'S

—FOR—

Kodaks, Drugs, College Supplies, etc.

COR. HIGH and TENTH AVE.

# Special Senior Offer

THE NEW STUDENT FOLDER, \$3.50 PER DOZEN

(Regular Price, \$10.00 per Doz.)

An exclusive style of our own, finished only in our usual way, THE BEST. We have never offered anything so good as this at so reasonable price to Ohio State Students before. Secure ticket through our Special Representative, JAMES H. ERWIN, 32 E. Sixteenth Ave., Bell Phone, North 2694; Citizens 14211.

*Baker Art Gallery*

COLUMBUS, O.

THE OLD RELIABLE, STATE & HIGH STS.

## We Can Fit You No Matter How You're Built

WE are specialists in fitting the hard to fit. We handle each customer in a different way and cater to his individual measure. Likewise, we suit his individual taste. If you have had trouble in getting fitted probably, you're the man we're looking for. As for the style and price—well, these will be as pleasing to you as the fit.

## The "So-Different" Tailory

WE DO PRESSING.

High St. at Tenth Ave.

Citizens Phone 5396

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COR. TENTH AVE. and HIGH ST.

Six Bowling Alleys, Eight Pool Tables, Fine Line of Cigars, Tobacco. Cigarettes. Candies, Soft Drinks, Hot Lunch, Barber Shop.

## National Indoor Games

"For the Student."

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SEASON 1911-1912.

*To Those Who Neglected to Learn to Dance*

## Prof. W. J. Rader's Academies of Dancing

*will organize beginners' classes as follows:***HIGH ST. ACADEMY,**

199½ S. High St. Phones: Auto 3456; Bell 5877.

Will organize a beginners' class Friday evening, February 2nd, 7:30 o'clock.

**NEIL AVE. ACADEMY,**

647 Neil Ave. Phones: Auto 4431; Bell 6189.

Will organize a beginners' class Tuesday evening, January 30th, 7:30 o'clock.

**OAK ST. ACADEMY,**

827 Oak St. Phones: Auto 4431; Bell 6189.

The Academy has been rearranged for functions of all sizes and is complete in every respect.

**TUITION**

Gentlemen, per term of 10 lessons.....	\$4 00
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Private lessons can be had afternoons or evenings	
Tuition can be paid \$1.00 per week until paid. The Waltz, Two-Step, Three-Step, Colum-	
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**WINTER PAVILION**—Located on Neil Ave. between Goodale St. and Poplar Ave. Open Tuesday, Friday and Saturday evenings. Operated on Summer plan.

**ACADEMIES AND PAVILION CAN BE SECURED FOR PRIVATE PARTIES,  
CLUB DANCES, FRATERNITY HOPS, ETC.**

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"Ball-Room Experts"

35 CHITTENDEN AVE.

Director, H. Kurtz Randall.

Bell Phone, North 1487

L. B. Carruthers, Mgr.

Citizens Phone 15.

## THE ELMONT

GROVEPORT, O.

### SPECIAL ATTENTION TO STUDENT PARTIES

Only 5 minutes' walk from both the Scioto  
Valley and Hocking Railroads.

## NO BETTER CLOTHES THAN MENDEL'S

— AT ANY PRICE —

We will make you a better fitting, better  
wearing and better looking Suit or Overcoat  
for \$20.00 than others will at \$25.00. Fit  
guaranteed.

**MENDEL, THE TAILOR**, 545 N. High St.  
Few Doors South of Goodale St.

STUDENTS WILL RECEIVE A CORDIAL WELCOME AT

## Kiler's Drug Store

COR. 8th AVE. AND HIGH

HEADQUARTERS FOR A. D. S. REMEDIES

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## LINE YOUR BUILDING WITH THE NEW WALL MATERIAL BEAVER BOARD

Takes the Place of Lath, Plaster and Wall Paper. Cover your Roofs with the Ready to Lay

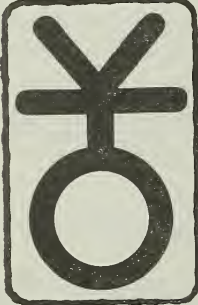
### TRYOID RUBBER ROOFING

The best for service and price For sale by Hardware and Lumber Dealers everywhere.

## THE CENTRAL OHIO PAPER CO.

COLUMBUS, O

ORR-KIEFER



# Orr-Kiefer Studio Co.

199-201 SOUTH HIGH STREET

## Artistic Photography

*"Just a little better than the best"*  
SPECIAL RATES TO STUDENTS

**COLUMBUS, O.** We Frame Pictures of all kinds — RIGHT

**"The Name Tells a True Story."**

Superior Drills are used in every grain growing country on earth wherever grain is grown."

It makes no difference what your seeding conditions are, you can rely on the Superior to do that work as it should be done. Superior Drills are sold under a warranty that absolutely protects the purchaser. Send for the Superior Catalogue. Read it carefully and then go to your local dealer and insist on seeing the Superior Drill.

**"The Superior feed sows every seed."**

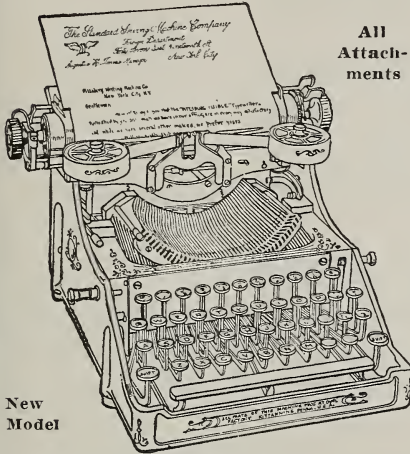
Superior Drills are made in every style and in all sizes, from one horse up.

**THE AMERICAN SEEDING MACHINE CO. INCORPORATED**  
SPRINGFIELD, OHIO, U.S.A.

**SPECIAL**To Teachers, Students, Ministers, Etc.  
On the Late Model Standard

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AN HONEST TYPEWRITER AT AN HONEST PRICE.

All  
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Fully guaranteed.

Two-color ribbon—universal keyboard—back spacer—line lock—ball-bearing carriage.

Mention this magazine, and address

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HATS, . . . \$2.00

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AGRICULTURAL DRAWING INSTRUMENTS AND MATERIALS  
HIGH ST., OPP. ELEVENTH AVE





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## EVERY CAR

HAS SPECIAL CARE,

IS GUARANTEED,

IS ANALYZED.

## “PRAIRIE STATE” MEANS QUALITY

Our Standard and Guarantee is positively  $12\frac{1}{2}\%$  phosphorus

We will furnish higher grades, if desired.

Fine and uniform grinding make our Phosphate Rock valuable.

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PROMPT DELIVERY DIRECT FROM OUR OWN MINES TO YOU.

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## PRAIRIE STATE PHOSPHATE CO.

(The Natural Phosphate Co.)

Monadnock Block, CHICAGO, ILLINOIS.

When in need of Surgical or Veterinary Instruments or Hospital Supplies, etc., do not forget we carry a full and complete up-to-date line. Catalogs sent FREE, POSTPAID, UPON REQUEST.

## SHARP & SMITH

Manufacturers and Importers of

**High Grade Surgical and Veterinary  
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103 NORTH WABASH AVE., CHICAGO, ILL.

2 Doors North of Washington St.

Established 1844.

Incorporated 1904.

## THE M. HAMM CO.

Manufacturers of

**High-Grade Commercial Fertilizer  
Acid Phosphate**

12, 14, 16 and 18 Per Cent.

**Washington C. H., Ohio**

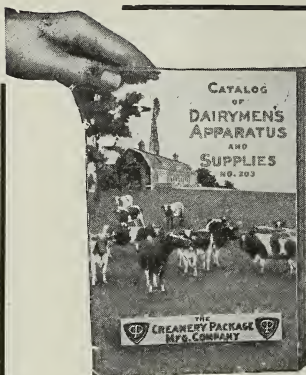
## HOOSIER GRAIN DRILLS

*"The Hoosier is still  
the best grain drill."*

Ask the farmer who bought a Hoosier Drill 25 or 30 years ago and who has recently purchased a new Hoosier and he will not hesitate to tell you there is no better grain drill on earth. The Hoosier was up-to-date 50 years ago and it is up-to-date now. Every size. All styles. You can always get what you want in the Hoosier line. Send for the Hoosier Catalogue. Call on your dealer and insist on having a Hoosier Drill.

**THE AMERICAN SEEDING MACHINE CO. INCORPORATED**  
RICHMOND INDIANA, U. S. A.

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OUR New Catalog of Dairymen's Supplies should be in the hands of every owner of a cow. It is filled from cover to cover—contains 87 pages—with valuable information about modern dairy apparatus and utensils.

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It will show you the latest models in butter churns and workers, milk testers and testing supplies, tinware, stable fittings and supplies, engines, boilers, and everything in use on the modern dairy farm at the lowest prices.

### Up-to-Date Equipment Adds to Dairy Profits

We can help you in many ways to bigger dairy profits. Our organization covers the entire country and is in close touch with the latest and best methods of dairying everywhere. Write us freely on any subject connected with dairy equipment and methods.

We manufacture equipment for every kind or size of dairy plant and equip more modern plants than all other concerns combined.

The catalog is free to everyone who asks for it. In writing, please state what machines or line of dairying you are most interested in. Address

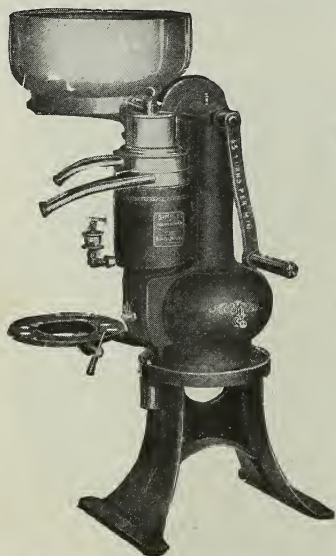
### The Creamery Package Mfg. Company

Dept. 29.

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## The "SIMPLEX" Link Blade Cream Separator

IMPROVED DESIGN



LIGHTEST RUNNING.

LARGEST CAPACITIES.

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The Only Practical Large Capacity Separator

500 lbs. ....	\$75.00	900 lbs. ....	\$ 90.00
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